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ABSTRACT

A strategy for decision making in the design of reading instruction is suggested in this paper. Decision categories, or "junctures," are anticipated, and a set of principles is developed as a guide to selection and sequencing of program tactics. Included in the discussion is an analysis of the problems inherent in decision making, an examination of principles valuable to content selection, a discussion of the construction of a skills progression framework, and a description of techniques for specifying program pedagogy and teaching procedures. The importance of establishing a sound conceptual basis for teaching is stressed. (KS)

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JUNCTURES IN THE DESIGN OF A READING PROGRAM*

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The initial title for this paper was "Crises in the Design of a Reading Program." However, it is easy to imagine someone misinterpreting such a phrase. The purpose of the paper is to discuss decision points in the design and development process and the strategies for dealing with them. The purpose is not to discuss emotional considerations that might be implied by the word "crisis." The word "juncture," defined as a point in time made critical by a particular set of circumstances, seemed to be particularly appropriate. Hence, the revised title.

The design and development of a reading program can be described as either a labor of love or a love of labor. A significant part of this labor is identifying and acting upon an extremely large number of decisions that occur continually in the design and development process. Some of these decisions are obviously much more important than others. Some are so important that the impact on student achievement and/or acceptance in the marketplace is profoundly influenced by the way that the decisions are made. These then, are the "Junctures in the Design of a Reading Program."

In a forum such as this, one should not attempt to communicate an algorithm of the design process, even if such an algorithm could be generated. Nor can one discuss a significant number of these junctures. What can be done, and what I have attempted, is to describe in general terms, how the instructional designer should plan for and act upon these junctures.

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The concept of "junctures" and how they can be dealt with are illustrated by several examples. It should be noted that these ideas are a product of a lengthy research, design, and development process at SWRL.

The Problem and a Strategy

I have stated that the design and development of a reading program involves a continuous series of decisions. It is inefficient to make these decisions on a one-at-a-time basis. In part, this is because decisions normally should reflect a consensus of several persons, and arriving at a consensus for each decision is extremely time consuming. Too, similar kinds of decisions should be made in a similar fashion with similar criteria if the resulting instructional program is to have a strong internal consistency. This kind of consistency is extremely important for effective teacher training, for teacher acceptance, and for effectiveness in helping children learn.

A strategy that will enable the designer to efficiently deal with these decisions is to first, identify categories of decisions (the "junctures") and second, to develop a set of guiding principles that can be used to determine the action that is to be taken whenever decisions within the category occur. Taken in the aggregate, these principles form what could be termed the philosophy or the architecture of a program.

Let me now turn to several examples of such decision categories and briefly describe some of the guiding principles that could be appled to each.

Outcome Definition and Sequencing

There is an infinite variety in the possible content of a reading program and in the sequencing of that content. To bring a degree of order and efficiency into these types of decisions, they must be made within the

context of a set of guiding principles and concepts. In the absence of a powerful conceptual framework, content selection and sequencing decisions will still be made, but often on the basis of a single criterion that is of immediate importance to an instructional designer, storywriter, editor or teacher. There is the possibility, or even probability, that these decisions will not meet other important criteria. For example, a storywriter may select new words on the basis of the most convenient means of describing a particular character or event. Such words may be unfamiliar and may not be useful to the child, they may have nothing to do or may even interfere with previously learned decoding skills, or they may be extremely difficult to learn and an unnecessary source of frustration for the child.

Several principles that can be used to guide content selection and sequencing decisions can be stated as examples. One is that content must be predefined in terms of skills that children are to acquire as a function of the instructional process. Another is that the content should grow out of a needs assessment--an assessment in terms of the skills that are useful to children both within and outside the school environment and an assessment in terms of the content that is likely to motivate children. A third principle is that the instructional outcomes should be analyzed in terms of their prerequisites. These prerequisites, if there is evidence that children do not have such skills in their repertoire, must become instructional outcomes themselves and must be sequenced prior to the outcomes from which they are derived. A fourth principle helps define the limits of the instruction. Research data should be analyzed for these limits in terms of defining what children can not be expected to master and, on the other side of the coin, what does not need to be included because it has already been mastered.

Constructing a Skills Progression

Another set of decisions in the design of a reading program concerns the skill sequence. Reading instruction almost invariably begins with simple skills followed by progressively more complex outcomes. Many decisions have to be made as to how to build in this progression. Here, an important guiding principle for decision making is to build upon inter-task effects.

Inter-task effects can be defined by the following example. A child learns the following grapheme-phoneme correspondence: it=/it/. The child learns a second grapheme-phoneme correspondence: s=/s/. In another task, the child learns blending skills--two separate sounds can be pushed together in time and pronounced as an uninterrupted vocalization. With these three tasks we have the possibility of a simple type of inter-task effect to build upon. The child can now be asked to read the word "sit." The child should have the opportunity to read this word in a variety of meaningful contexts--a sentence or even better, a story. This provides an opportunity to practice and maintain previously learned correspondences and blending skills and, at the same time, provides an opportunity for the child to experience a reading task in which there is a reception of meaningful information as a function of employing the decoding skills.

Let us carry this a step further. Suppose that the child now has the capacity to read a number of words. Not only can we now provide opportunities for the child to use word attack skills when reading these words in stories but the child can also be given an opportunity to read these words in other types of functional contexts such as street signs, advertisements, recipes and directions in workbook activities. Now the child is practicing word recognition skills and word interpretation skills and, at the same time,

is developing an awareness of the utility of these skills. Such an awareness may be a crucial aspect of motivation.

The same inter-task analysis can be carried out at other levels--wherever and whatever new content has been identified in the curriculum. Tasks can be repeated and presented in a variety of contexts--the context being some type of superordinate task category.

Specifying the Program Pedagogy

A third set of design decisions relates to teaching procedures. Decisions as to how to conduct the instructional activities in a program must either be made by the instructional designer or must be left to the judgment of the teacher. Such decisions can best be made in the context of a carefully designed pedagogical structure (these are the principles to guide the decision making). Such a structure can provide both the "rhyme and reason" for these decisions. The "rhyme" is in terms of the repetitive nature of the procedures. For example, a reading program may have a repeated cycle of teacher presentation of new content, practice of new content, practice of new content when it is combined with previously learned content; followed by diagnostic assessment; and finally followed by supplementary instruction for children having difficulty with the new content. Cycles of repeated sub-activities can be identified within each one of these activity categories. The point is that such repeated cycles of activities provide a great deal of information for the teachers' "What do I do?" and "When do I do it?" questions. Because they are repeated cycles, the information is relatively easy to use. The teacher is not faced with a new activity routine for each new instructional outcome. Nor is the designer faced with the task of developing a new activity routine to suggest to the teacher.

So much for the "rhyme." The "reason" is provided by the pedagogical structure in terms of confining the suggested teacher activities to those that are likely to help the child master the program outcomes. Too often programs ask teachers and teachers ask children to participate in activities that at best, teach something other than the intended instructional outcomes. At worst, they interfere directly with the child's mastery of the instructional outcomes.

An important aspect of the pedagogical structure is to identify variables to be controlled by the program and those to be controlled by the teacher. Teaching activity decisions can either be made by the designer or can be left for the teacher. Let's look at one example--the decision as to which children are singled out for additional instruction after diagnostic assessment. The instructional designer can take responsibility for this decision by providing a simple algorithm tied to the test score. The teacher could be told to select any child who misses more than three items on a given test category. Alternatively, the designer may leave the decision completely to the teacher. The directions to the teacher may advise that a child should be selected for additional instruction if, after analyzing the test scores, "you feel that this would be appropriate." There are a number of reading programs where these decisions have been made in the extreme, either on one side or the other. Almost all decisions may be left to the teacher, the designer expecting wide variations in how the instruction is implemented. Other designers may attempt to make all of the decisions themselves, providing a detailed script for the teacher to follow. When the program's pedagogical structure is being developed, the designer should be cognizant of the individual differences that exist in teachers as well as

in students. Some teachers need and expect more direction and guidance. But some will be unresponsive and alienated by more direction and guidance. It would, at first glance, seem that this is a no-win situation. However, on closer examination, there appears to be a reasonable middle ground that is based upon the following assumption: designers don't always have a great deal of certainty about what is likely to work best for a particular child learning a particular outcome in a particular learning environment. Dictating procedures in the face of such uncertainty is arrogance. Conversely, when research and tryouts clearly indicate the advantage of a particular procedure, such direction should be built into the program. To do otherwise is negligence. For all of those grey areas where the designer feels that the procedures are likely to work most of the time, the procedure should be built into the program as suggested activities. Finally, in those areas where the designer feels the teacher may have a better way to instruct or may have a better way to assess, the program should encourage these types of teacher decision-making.

Summary

The above discussion has illustrated, through several examples, a strategy for decision-making in the design of reading instruction. First of all, the decision categories that have been termed "junctures" are anticipated. Then, for each juncture, a set of principles are developed to guide the designer whenever he or she is faced with decisions that fall within the category.

We can confidently expect that designers of reading instruction will continue to exhibit a great deal of diversity in terms of the path that should be taken at each one of these junctures. This is not only to be expected but, when the decisions are made on a reasoned basis, the results

are likely to yield a diversity of instructional tools that is healthy and desirable. It is when the junctures themselves are not sought out or are ignored that we have the greatest potential for failure. The decisions will still be made, but they will often be made without deliberation. They will often not take into account important criteria. They will often be inconsistent. The likely result will be inefficient and ineffective instruction.